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CUSTOMER SUCCESS

Major Lottery Agency Picks a Winner

Accessing mainframe tape data shouldn't be a gamble and a good Storage Manager knows when to walk away from a losing hand. Physical tape was causing a major lottery agency grief from frequent I/O errors and job restarts, and was wasting money and space with an inefficient, legacy cartridge format. The Agency's best bet was to go "all in" with Luminex's Channel Gateway mainframe virtual tape solution.

The customer consists of 12 subsidiaries, 6,000 employees and $3.675 billion in annual revenues from a variety services and activities.

Previous Mainframe Environment

Running CICS, IDMS and traditional batch jobs, the Agency's z890 mainframes are primarily used for administration and payroll processing, services tracking and inventory control. Previously, all tape operations were performed with 20 STK 9490 standalone tape drives, 12 at the production site and 8 at the DR site, using standard z/OS tools and access methods such as QSAM, IDCAMS and DF/Sort, in addition to DFSMSdss and CA-ASM2 for backups. Their backup and archive library filled a room with over 12,000 physical 3490 tape cartridges, all managed by CA-1.

The Agency also owns SAN storage systems, used by its open systems, and a private WAN connected to its DR site approximately 3-4 km from the production site.

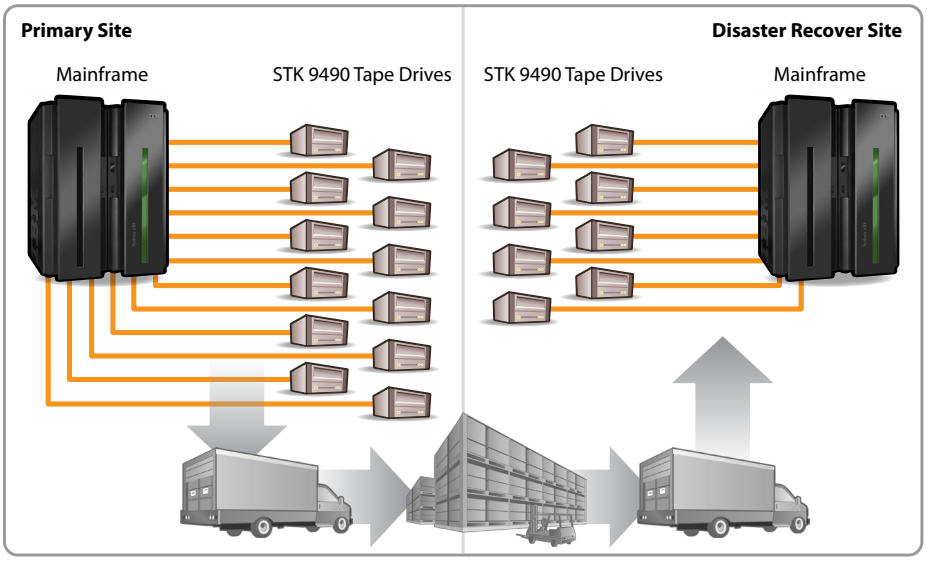

Figure 1. Previous mainframe tape environment with 20 STK tape drives, offsite tape vaulting and third-party tape transport.

Challenges

Reliance on an older physical tape format presented a number of challenges for the Agency. The cartridges were less cost-effective and harder to acquire than current formats. Since many would contain less than 1 GB of data, they were not efficiently using the available space, both on the cartridge and on the shelves in the vault.

In order to effectively use less-expensive, larger capacity physical tapes, the Agency would need to rewrite all of their applications to include tape stacking capability. At the Agency, like many mainframe operations, the stability of a proven application is fundamental to the mainframe's value. Not only would rewriting the applications be expensive, it would require changes to a system that was already working and proven. This was not an option.

There was also the issue of reliability. The older equipment and tapes were prone to frequent I/O errors, regularly requiring job restarts and causing delays in service.

Key Highlights

Industry: Major Lottery Agency

Business Profile: 12 subsidiaries, 6,000 employees and $3+ billion in annual revenues

IT Environment

- 2 IBM z890s, one at production and one at DR site
- 20 STK 9490 tape drives, 12 at production and 8 at DR site
- 20 mainframe channels, 12 at production, 8 at DR site
- 12,000 physical tape cartridges
- SAN storage for open systems
- Private WAN connecting the production site and the customer-owned disaster recovery site

Backup Software

- IBM DFHSM
- CA-ASM M2

Challenges

- Existing mainframe applications used older, smaller tapes
- Continued procurement of older, smaller format tapes was difficult and costly
- Mainframe applications would need to be rewritten to take advantage of newer, larger tapes
- I/O errors were common, requiring job restarts regularly
- Inefficient use of expensive media
- Physical drives limited the number of concurrent jobs

The Mainframe Solution

- 2 Luminex Channel Gateways, 1 at the production site and 1 at DR site
- Existing SAN storage, shared with open systems, no new storage required

Business Benefits

- Reduced tape operating expenses
- Improved reliability
- Improved performance
- Leverage existing disk-based enterprise storage
- Simplified storage management and backup
- Improved RPO & RTO
- Reduced floor space requirements by eliminating tape vault and drives

"Channel Gateways allow us to leverage our existing SAN storage, lowering the cost of implementing virtual tape, eliminating tape I/O errors and simplifying storage management for the entire data center."

Technical Analyst
Major Lottery Agency

Luminex Channel Gateway Solution

The Agency needed to lower mainframe operating costs and improve the reliability of tape I/O with a solution that was compatible with their existing mainframe hardware and software. Ideally, the solution would have no arbitrary limits on the number of virtual tape drives, improve the performance of all tape operations and leverage their existing SAN storage.

Luminex's Channel Gateway mainframe virtual tape solution was selected because it provides a flexible virtual tape solution that is completely transparent to existing applications and natively supports enterprise storage from a variety of vendors. Additionally, Channel Gateways support up to 4096 virtual tape devices per channel, far exceeding the Agency's needs. The virtual cartridge sizes are configurable and no space is wasted.

New Mainframe Environment

The Agency has simplified its mainframe tape operations. At the production site, 12 physical tape drives and as many mainframe channels were replaced with one Channel Gateway with 6 channels emulating 128 virtual tape drives. The DR site went from 8 physical tape drives/channels down to one Channel Gateway with 4 channels emulating 64 virtual tape drives. The new solution is completely tapeless, requires half as many mainframe channels and provides an unlimited number of virtual tape drives and volumes.

Selected VOLSERs are replicated hourly by the Channel Gateway over the Agency's private WAN from the production site to DR, ensuring a short RTO and recent RPO. While focusing on lowering mainframe operating expenses and improving reliability, the Agency also realized an improvement in disaster recovery performance.

Mainframe tape data is now stored in a partition on the SAN storage, which is also shared with open systems. No additional storage was required. Storage management is now consolidated into a single storage system with no changes to existing tools or procedures.

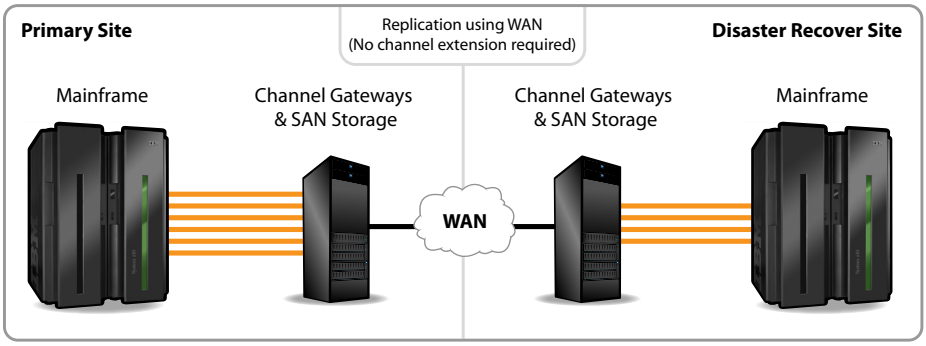

Figure 2. New mainframe virtual tape environment with Luminex Channel Gateways, SAN storage and replication to the DR site over a private WAN.

Benefits

After implementing Luminex's Channel Gateway mainframe virtual tape solution, the Agency's tape I/O errors have been eliminated and backups complete at least twice as fast with half the number of mainframe channels. Implementation was fast and easy, with no disruption of services and, most importantly, no changes in mainframe applications. Eliminating physical tapes also allowed the Agency to empty an entire room in the data center previously used for shelves of tape storage and eliminate 20 STK 9490 standalone tape drives. In every respect, the Agency's experience demonstrates the value, reliability, performance and simplicity that can be achieved by selecting Luminex's Channel Gateway, THE STANDARD for mainframe virtual tape.

About Luminex

LUMINEX is a leading developer and provider of disk-based mainframe virtual tape products and technologies. Luminex Channel Gateways allow mainframe enterprise users around the world to take full advantage of the benefits of Modern Mainframe Virtual Tape to eliminate or reduce physical tape, improve RTO and RPO, lower capital and operating costs and improve data security. With the LUMINEX Channel Gateways, enterprises can now have a single backup and recovery program for their mainframe and open systems data.

Luminex Software, Inc.
871 Marlborough Avenue
Riverside, CA 92507

1.888.LUMINEX
1.951.781.4100
www.luminex.com